

VOLUME 24, PART II

SUBJECT INDEX

A

Admixtures.

- Calcium Chloride as an Admixture in Concrete. Duff A. Abrams, 781. Discussion, 835.
- Effect of Finely Divided Lignite Coal on the Strength of Concrete. I. F. Morrison and H. R. Webb, 841. Discussion, 845.
- Effect of hydrated lime on wear of concrete, 892.
- Laboratory Investigations of the Influence of Curing Conditions and Various Admixtures on the Life of Concrete Stored in Sulfate Solutions as Indicated by Physical Changes. Dalton G. Miller, 847. Discussion, 862.

Aggregates.

- Effect of quality of gravel on wear of concrete, 884.
- Effect of quality of sand on wear of concrete, 889.
- Effect of quality of slag on wear of concrete, 886.
- Effect of quality of stone on wear of concrete, 882.
- Influence of Aggregates upon Shrinkage of Mortar and Concrete. Cloyd M. Chapman, 767. Discussion, 778.

Alloys.

- Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.
- Comparative loss in weight of test pieces in accelerated electrolytic corrosion test, and long-time immersion test, for 42 metals and alloys in Edna No. 2 Mine water, 744.
- Corrosion data on various alloys and alloy steels, 424.
- Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.
- Some "heat-resistant" alloys now in use or proposed for high temperature service of various types, 85.
- Symposium on Corrosion-Resistant, Heat-Resistant and Electrical-Resistance Alloys:
- Introduction—with Tabulation of Manufacturers' Data on Composition and Properties of the Alloys. Jerome Strauss, 189.
 - Corrosion-Resistant Alloys—Past, Present and Future—with Suggestions as to Future Trend. P. A. E. Armstrong, 193.
 - Non-Rusting Chromium-Nickel Steels. B. Strauss, 208.
 - Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217.
 - Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259.

Alloys (Continued):

Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273.

The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304.

Some Principles Underlying the Successful Use of Metals at High Temperatures. F. A. Fahrenwald, 310.

Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348.

Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373.

Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383.

Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401.

Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416.

General Discussion, 422.

Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990. Discussion, 1004.

Thermal expansion and contraction of metals at various temperatures, 326.

Aluminum.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.

Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.

Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990. Discussion, 1004.

B**Bearings.**

The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304. Discussion, 422.

Brass.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Corrosion losses of miscellaneous metals in salt spray test, 256.

Brick.

Factors Affecting Brick Masonry Strength. S. H. Ingberg, 909.

Bronze.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Corrosion losses of miscellaneous metals in salt spray test, 256.

Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.

Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.

C**Calcium Chloride.**

Bibliography on calcium chloride in concrete, 830.

Calcium Chloride as an Admixture in Concrete. Duff A. Abrams, 781. Discussion, 835.

Cast Iron.

Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56. Discussion, 142.

Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.

Discussion on cast iron for pipe, 706.

"Growth" in cast irons, 79.

Recent Investigations on Cast Iron for Pipe. Richard Moldenke, 682. Discussion, 706.

The Standard Test Bar for Cast-Iron Pipe with Special Reference to Its Progressive Deflection. James T. MacKenzie, 664. Discussion, 706.

Castings.

Composition and Physical Properties of Cast 12-per-cent Manganese Steel. John H. Hall and G. R. Hanks, 626.

Chain.

Chain: Effect of Proofing and Annealing on Brittleness in Large Chain Links. C. G. Lutts, 651. Discussion, 660.

Discussion on chain, 660.

Coal.

Effect of Finely Divided Lignite Coal on the Strength of Concrete. I. F. Morrison and H. R. Webb, 841. Discussion, 845.

Compression Testing.

Effect of End Condition of Cylinder in Compression Tests of Concrete. H. F. Gonnerman, 1036. Discussion, 1064.

Symposium on Effect of Temperature upon the Properties of Metals, 9.

Concrete.

Accelerated Wear Tests of Concrete Pavements. F. H. Jackson and J. T. Pauls, 864. Discussion, 897.

Bibliography on calcium chloride in concrete, 830.

Calcium Chloride as an Admixture in Concrete. Duff A. Abrams, 781. Discussion, 835.

Direct Measurement of Poisson's Ratio for Concrete. A. N. Johnson, 1024. Discussion, 1034.

Effect of End Condition of Cylinder in Compression Tests of Concrete. H. F. Gonnerman, 1036. Discussion, 1064.

Effect of Finely Divided Lignite Coal on the Strength of Concrete. I. F. Morrison and H. R. Webb, 841. Discussion, 845.

Influence of Aggregates upon Shrinkage of Mortar and Concrete. Cloyd M. Chapman, 767. Discussion, 778.

Laboratory Investigations of the Influence of Curing Conditions and Various Admixtures on the Life of Concrete Stored in Sulfate Solutions as Indicated by Physical Changes. Dalton G. Miller, 847. Discussion, 862.

Methods of Securing Samples of Completed Pavements, with Reference to the Determination of the Quality of the Cement-Concrete Foundation. E. E. Butterfield, 1066. Discussion, 1080.

Copper.

- Accelerated Fatigue Tests and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.
- Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.
- Corrosion data on various alloys and alloy steels, 424.
- Corrosion losses of miscellaneous metals in salt spray test, 256.
- Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.

Corrosion.

- An Accelerated Electrolytic Corrosion Test. Robert J. Anderson and George M. Enos, 735. Discussion, 753.
- Comparative loss in weight of test pieces in accelerated electrolytic corrosion test, and long-time immersion test, for 42 metals and alloys in Edna No. 2 Mine water, 744.
- Corrosion data on various alloys and alloy steels, 424.
- Corrosion losses of miscellaneous metals in salt spray test, 256.
- Discussion on corrosion tests of metals, 753.
- Symposium on Corrosion-Resistant, Heat-Resistant and Electrical-Resistance Alloys:
- Introduction—with Tabulation of Manufacturers' Data on Composition and Properties of the Alloys. Jerome Strauss, 189.
 - Corrosion-Resistant Alloys—Past, Present and Future—with Suggestions as to Future Trend. P. A. E. Armstrong, 193.
 - Non-Rusting Chromium-Nickel Steels. B. Strauss, 208.
 - Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217.
 - Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259.
 - Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273.
 - The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304.
 - Some Principles Underlying the Successful Use of Metals at High Temperatures. F. A. Fahrenwald, 310.
 - Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348.
 - Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373.
 - Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383.
 - Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401.
 - Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416.
 - General Discussion, 422.
- Types of Apparatus Used in Testing the Corrodibility of Metals. Henry S. Rawdon, A. I. Krynetsky and W. H. Finkeldey, 717. Discussion, 753.

D

Drills.

Magnetic Tests of A.S.T.M. Drills. W. B. Kouwenhoven, 635.

Duralumin.

Accelerated Fatigue Tests and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.

E

Effect of Temperature.

See also **Heat-Resistant Alloys.**

Some Principles Underlying the Successful Use of Metals at High Temperatures. F. A. Fahrenwald, 310. Discussion, 422.

Symposium on Effect of Temperature upon the Properties of Metals: A review of the present state of knowledge of the properties of metals at various temperatures and a discussion of the necessity for promoting further knowledge: Foreword, 9.

Industrial Applications of Metals at Various Temperatures. L. W. Spring, 11.

Methods of Testing at Various Temperatures and Their Limitations. V. T. Malcolm, 15.

Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88.

Bibliography, 128.

General Discussion, 142.

Electrical-Resistance Alloys.

Symposium on Corrosion-Resistant, Heat-Resistant and Electrical-Resistance Alloys:

Introduction—with Tabulation of Manufacturers' Data on Composition and Properties of the Alloys. Jerome Strauss, 189.

Corrosion-Resistant Alloys—Past, Present and Future—with Suggestions as to Future Trend. P. A. E. Armstrong, 193.

Non-Rusting Chromium-Nickel Steels. B. Strauss, 208.

Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217.

Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259.

Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273.

The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304.

Some Principles Underlying the Successful Use of Metals at High Temperatures. F. A. Fahrenwald, 310.

Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348.

Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373.

Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383.

Electrical-Resistance Alloys (Continued):

- Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401.
- Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416.
- General Discussion, 422.

Electron Metal.

- Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990.
- Discussion, 1004.

Endurance Testing.

- See **Fatigue Testing**.

F**Fatigue Testing.**

- Accelerated Fatigue Testing and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.
- Bibliography on endurance testing, 544.
- Discussion on fatigue of metals, 601.
- Effect of cold working on endurance limit, 564.
- Effect of drawing temperatures on endurance properties of steel, 517.
- Effect of notches on the endurance limit of metals, 567.
- Endurance (fatigue) limits of steel at various temperatures, 162.
- Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273. Discussion, 422.
- Inclusions in steel, 526.
- Notes on Some Endurance Tests of Metals. H. W. Gillett and E. L. Mack, 476. Discussion, 601.
- Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.
- The Endurance Range of Steel. D. J. McAdam, Jr., 574. Discussion, 601.
- Variation in cleanliness in steel, 524.

G**Gravel.**

- Effect of quality of gravel on wear of concrete, 884.

Gun Metal.

- Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Gypsum.

- Properties of Gypsum Tile. J. M. Porter, 901.

H**Hardness Testing.**

- Report of hardness tests on A.S.T.M. drills, 644.
- Symposium on Effect of Temperature upon the Properties of Metals, 9.

Heat-Resistant Alloys.

- See also **Effect of Temperature**.

- Some "heat-resistant" alloys now in use or proposed for high temperature service of various types, 85.

Heat-Resistant Alloys (Continued):

Symposium on Corrosion-Resistant, Heat-Resistant and Electrical-Resistance Alloys:

- Introduction—with Tabulation of Manufacturers' Data on Composition and Properties of the Alloys. Jerome Strauss, 189.
- Corrosion-Resistant Alloys—Past, Present and Future. P. A. E. Armstrong, 193.
- Non-Rusting Chromium-Nickel Steels. B. Strauss, 208.
- Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217.
- Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259.
- Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273.
- The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304.
- Some Principles Underlying the Successful Use of Metals at High Temperatures. F. A. Fahrenwald, 310.
- Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348.
- Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373.
- Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383.
- Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401.
- Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416.
- General Discussion, 422.

Heat Treatment.

- Chain: Effect of Proofing and Annealing on Brittleness in Large Chain Links. C. G. Lutts, 651. Discussion, 660.
- Effect of drawing temperatures on endurance properties of steel, 517.
- High Tensile Strengths with Low-Carbon Steels. Roy H. Smith, 618.
- Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217. Discussion, 422.

I**Impact Testing.**

- Chain: Effect of Proofing and Annealing on Brittleness in Large Chain Links. C. G. Lutts, 651. Discussion, 660.
- Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.
- Symposium on Effect of Temperature upon the Properties of Metals, 9.

Iron.

- Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56. Discussion, 142.
- Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.
- Discussion on cast iron for pipe, 706.

Iron (Continued):

- Recent Investigations on Cast Iron for Pipe. Richard Moldenke, 682. Discussion, 706.
- Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373. Discussion, 422.
- The Standard Test Bar for Cast-Iron Pipe with Special Reference to Its Progressive Deflection. James T. MacKenzie, 664. Discussion, 706.
- X-ray spectography on iron and steel at elevated temperatures, 49.

L**Lead.**

- Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.

M**Magnesium.**

- Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.
- Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990. Discussion, 1004.

Magnetic Testing.

- Magnetic Tests of A.S.T.M. Drills. W. B. Kouwenhoven, 635.

Malleable Castings.

- Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56. Discussion, 142.

Manganese Bronze.

- Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Manganese Steel.

- Composition and Physical Properties of Cast 12-per-cent Manganese Steel. John H. Hall and G. R. Hanks, 626.

Metallography.

- Inclusions in steel, 526.
- Variation in cleanliness in steel, 524.

Monel Metal.

- Accelerated Fatigue Tests and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.
- Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.
- Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383. Discussion, 422.
- Corrosion data on various alloys and alloy steels, 424.
- Corrosion losses of miscellaneous metals in salt spray test, 256.
- Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.
- Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.
- Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401. Discussion, 422.

Mortar.

Influence of Aggregates upon Shrinkage of Mortar and Concrete. Cloyd M. Chapman, 767. Discussion, 778.

N

Nickel.

Accelerated Fatigue Tests and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416. Discussion, 422.

Corrosion data on various alloys and alloy steels, 424.

Corrosion losses of miscellaneous metals in salt spray test, 256.

Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.

Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.

Non-Rusting Chromium-Nickel Steels. B. Strauss, 208. Discussion, 422.

Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401. Discussion, 422.

Thermal expansion and contraction of metals at various temperatures, 326.

Nickel Silver.

Composition and physical properties of nickel silver and manganin, 431.

Corrosion losses of miscellaneous metals in salt spray test, 256.

Non-Ferrous Metals.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Comparative loss in weight of test pieces in accelerated electrolytic corrosion test, and long-time immersion test, for 42 metals and alloys in Edna No. 2 Mine water, 744.

Industrial Applications of Metals at Various Temperatures. L. W. Spring, 11. Discussion, 142.

Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.

Specific heat values of various materials at different temperatures, 331.

O

Oils.

An Oxidation Method for Measuring the Stability of Mineral Oils. T. S. Sligh, Jr., 964. Discussion, 973.

Blown Oils. H. B. Pullar, 943. Discussion, 949.

Sludging Tests for Transformer Oils: A Criticism of Various Test Methods and a Proposed New Method of Test. E. A. Snyder, 954. Discussion, 973.

Oxidation Method.

An Oxidation Method for Measuring the Stability of Mineral Oils. T. S. Sligh, Jr., 964. Discussion, 973.

Sludging Tests for Transformer Oils: A Criticism of Various Test Methods and a Proposed New Method of Test. E. A. Snyder, 954. Discussion, 973.

P**Pavements.**

- Accelerated Wear Tests of Concrete Pavements. F. H. Jackson and J. T. Pauls, 864. Discussion, 897.
Blown Oils. H. B. Pullar, 943. Discussion, 949.
Methods of Securing Samples of Completed Pavements, with Reference to the Determination of the Quality of the Cement-Concrete Foundation. E. E. Butterfield, 1066. Discussion, 1080.

Pipe.

- Discussion on cast iron for pipe, 706.
Recent Investigations on Cast Iron for Pipe. Richard Moldenke, 682. Discussion, 706.
The Standard Test Bar for Cast-Iron Pipe with Special Reference to Its Progressive Deflection. James T. MacKenzie, 664. Discussion, 706.

Poisson's Ratio.

- Determination of Poisson's Ratio and a Suggestion for Its Use in Stress Analysis. T. McLean Jasper, 1012. Discussion, 1021.
Direct Measurement of Poisson's Ratio for Concrete. A. N. Johnson, 1024. Discussion, 1034.

R**Resistance Alloys.**

- Some Electrical Properties of High-Resistance Alloys. M. A. Hunter and A. Jones, 401. Discussion, 422.

S**Sand.**

- Effect of Finely Divided Lignite Coal on the Strength of Concrete. I. F. Morrison and H. R. Webb, 841. Discussion, 845.
Effect of quality of sand on wear of concrete, 889.

Sieves.

- A Study of Sieve Specifications. Lewis V. Judson, 1084.
Influence of Diameter of Wire on Performance of Sieves. Duff A. Abrams, 1091.

Slag.

- Effect of quality of slag on wear of concrete, 886.

Sludging Tests.

- An Oxidation Method for Measuring the Stability of Mineral Oils. T. S. Sligh, Jr., 964. Discussion, 973.
Sludging Tests for Transformer Oils: A Criticism of Various Test Methods and a Proposed New Method of Test. E. A. Snyder, 954. Discussion, 973.

Specifications.

- How Shall the Benefits of A.S.T.M. Standardization be Secured to the Small User? Thomas H. Wiggin, 1097. Discussion, 1101.

Spectrography.

- X-ray spectrography on iron and steel at elevated temperatures, 49.

Standardization.

- How Shall the Benefits of A.S.T.M. Standardization be Secured to the Small User? Thomas H. Wiggin, 1097. Discussion, 1101.

Steel.

- Accelerated Fatigue Tests and Some Endurance Properties of Metals. D. J. McAdam, Jr., 454. Discussion, 601.
- Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56. Discussion, 142.
- Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383. Discussion, 422.
- Comparison of some data in both long and short-time tension tests at high temperatures, 77.
- Composition and Physical Properties of Cast 12-per-cent Manganese Steel. John H. Hall and G. R. Hanks, 626.
- Corrosion data on various alloys and alloy steels, 424.
- Corrosion losses of miscellaneous metals in salt spray test, 256.
- Corrosion-Resistant Alloys for Use in Acid Mine Water. Robert J. Anderson and George M. Enos, 259. Discussion, 422.
- Deterioration of Some Metals in Hot, Reducing Ammonia Gases. J. S. Vanick, 348. Discussion, 422.
- Effect of drawing temperatures on endurance properties of steel, 517.
- Endurance (fatigue) limits of steel at various temperatures, 162.
- Endurance Properties of Corrosion-Resistant Steels. D. J. McAdam, Jr., 273. Discussion, 422.
- High Tensile Strengths with Low-Carbon Steels. Roy H. Smith, 618.
- Industrial Applications of Metals at Various Temperatures. L. W. Spring, 11. Discussion, 142.
- Magnetic Tests of A.S.T.M. Drills. W. B. Kouwenhoven, 635.
- Non-Rusting Chromium-Nickel Steels. B. Strauss, 208. Discussion, 422.
- Notes on Some Endurance Tests of Metals. H. W. Gillett and E. L. Mack, 476. Discussion, 601.
- Resistance of Metals to Repeated Static and Impact Stresses. R. R. Moore, 547. Discussion, 601.
- Some Engineering Applications of High-Chromium-Iron Alloys. C. E. MacQuigg, 373. Discussion, 422.
- Some "heat-resistant" alloys now in use or proposed for high temperature service of various types, 85.
- Specific heat values of various materials at different temperatures, 331.
- Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion. Jerome Strauss and J. W. Talley, 217. Discussion, 422.
- The Carrying Capacity of Ball Bearings Made of Stainless Steel. Axel Hultgren, 304. Discussion, 422.
- The Endurance Range of Steel. D. J. McAdam, Jr., 574. Discussion, 601.
- Thermal expansion and contraction of metals at various temperatures, 326.
- Thermal expansion of alloy and plain carbon steel, 79.
- X-ray spectrography on iron and steel at elevated temperatures, 49.

Stone.

- Effect of quality of gravel on wear of concrete, 884.
- Effect of quality of stone on wear of concrete, 882.

Sulfates.

- Laboratory Investigations of the Influence of Curing Conditions and Various Admixtures on the Life of Concrete Stored in Sulfate Solutions as Indicated by Physical Changes. Dalton G. Miller, 847. Discussion, 862.

T**Tension Testing.**

Comparison of some data in both long and short-time tension tests at high temperatures, 77.

Symposium on Effect of Temperature upon the Properties of Metals, 9.

Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990. Discussion, 1004.

Testing Apparatus.

A Study of Sieve Specifications. Lewis V. Judson, 1084.

Influence of Diameter of Wire on Performance of Sieves. Duff A. Abrams, 1091.

Types of Apparatus Used in Testing the Corrodibility of Metals. Henry S. Rawdon, A. I. Krynitsky and W. H. Finkeldey, 717. Discussion, 753.

Testing, Methods of.

An Accelerated Electrolytic Corrosion Test. Robert J. Anderson and George M. Enos, 735. Discussion, 753.

Determination of Poisson's Ratio and a Suggestion for Its Use in Stress Analysis. T. McLean Jasper, 1012. Discussion, 1021.

Direct Measurement of Poisson's Ratio for Concrete. A. N. Johnson, 1024. Discussion, 1034.

Effect of End Condition of Cylinder in Compression Tests of Concrete. H. F. Gonnerman, 1036. Discussion, 1064.

Further Study of Accelerated Weathering: Effect of Variations in Exposure Cycle Combinations on Common Types of Varnishes. H. A. Nelson and F. C. Schmutz, 920.

Methods of Testing at Various Temperatures and Their Limitations. V. T. Malcolm, 15. Discussion, 142.

Sludging Tests for Transformer Oils: A Criticism of Various Test Methods and a Proposed New Method of Test. E. A. Snyder, 954. Discussion, 973.

Tension Tests of Thin Gage Metals and Light Alloys. H. A. Anderson, 990. Discussion, 1004.

Types of Apparatus Used in Testing the Corrodibility of Metals. Henry S. Rawdon, A. I. Krynitsky and W. H. Finkeldey, 717. Discussion, 753.

Thermal Expansion.

Thermal expansion and contraction of metals at various temperatures, 326.

Thermocouples.

Characteristics of Some Materials for Base-Metal Thermocouples. F. E. Bash, 416. Discussion, 422.

Tile.

Properties of Gypsum Tile. J. M. Porter, 901.

Timber.

Structural Timbers: Defects and Their Influence on Strength. J. A. Newlin and R. P. A. Johnson, 975. Discussion, 988.

Torsion Testing.

Symposium on Effect of Temperature upon the Properties of Metals, 9.

V**Valves.**

Characteristics of Material for Valves Operating at High Temperatures. J. B. Johnson and S. A. Christiansen, 383. Discussion, 422.

Varnish.

Further Study of Accelerated Weathering: Effect of Variations in Exposure Cycle Combinations on Common Types of Varnishes. H. A. Nelson and F. C. Schmutz, 920.

W**Wear Tests.**

Accelerated Wear Tests of Concrete Pavements. F. H. Jackson and J. T. Pauls, 864. Discussion, 897.

Weathering.

Further Study of Accelerated Weathering: Effect of Variations in Exposure Cycle Combinations on Common Types of Varnishes. H. A. Nelson and F. C. Schmutz, 920.

White Metals.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures. Clair Upthegrove and A. E. White, 88. Discussion, 142.

Wrought Iron.

Available Data on the Properties of Irons and Steels at Various Temperatures. H. J. French and W. A. Tucker, 56. Discussion, 142.

Chain: Effect of Proofing and Annealing on Brittleness in Large Chain Links. C. G. Lutts, 651. Discussion, 660.

X-ray.

X-ray spectography on iron and steel at elevated temperatures, 49.

AUTHOR INDEX

A

Abrams, D. A.

- Calcium Chloride as an Admixture in Concrete, 781.
- Influence of Diameter of Wire on Performance of Sieves, 1091.
- Discussion, 837, 838, 839, 845, 899.

Anderson, H. A.

- Tension Tests of Thin Gage Metals and Light Alloys, 990.
- Discussion, 609, 1010.

Anderson, R. J.

- Corrosion-Resistant Alloys for Use in Acid Mine Water, 259.
- An Accelerated Electrolytic Corrosion Test, 735.
- Discussion, 451, 764.

Armstrong, P. A. E.

- Corrosion-Resistant Alloys—Past, Present and Future—with Suggestions as to Future Trend, 193.
- Discussion, 435, 443.

Arnott, David.

- Discussion, 1108.

B

Barbour, F. A.

- Discussion, 706.

Bash, F. E.

- Characteristics of Some Materials for Base-Metal Thermocouples, 416.

Bassett, W. H.

- Discussion, 431.

Beyer, A. H.

- Discussion, 1110.

Breed, H. E.

- Discussion, 1080.

Breyer, F. G.

- Discussion, 762.

Brown, A. L.

- Discussion, 1105.

Butterfield, E. E.

- Methods of Securing Samples of Completed Pavements, with Reference to the Determination of the Quality of the Cement-Concrete Foundation, 1066.
- Discussion, 1082.

C

Capp, J. A.

- Discussion, 1103.

Carson, H. Y.

- Discussion, 760.

Chapman, Cloyd M.

Influence of Aggregates upon Shrinkage of Mortar and Concrete, 767.
Discussion, 778, 780, 846, 897.

Christiansen, S. A.

Characteristics of Material for Valves Operating at High Temperatures, 383.

Christie, A. G.

Discussion, 168.

Chubb, J. H.

Discussion, 778.

Crum, R. W.

Discussion, 898, 1081.

Cushman, A. S.

Discussion, 758.

D**Doke, G. E.**

Discussion, 660.

E**Elliott, G. K.**

Discussion, 170.

Enos, G. M.

Corrosion-Resistant Alloys for Use in Acid Mine Water, 259.
An Accelerated Electrolytic Corrosion Test, 735.
Discussion, 451, 764.

F**Fahrenwald, F. A.**

Some Principles Underlying the Successful Use of Metals at High Temperatures, 310.
Discussion, 166, 449.

Finkeldey, W. H.

Types of Apparatus Used in Testing the Corrodibility of Metals, 717.
Discussion, 757, 759.

Freeman, P. J.

Discussion, 845, 1064.

French, H. J.

Available Data on the Properties of Irons and Steels at Various Temperatures, 56.
Discussion, 184, 433, 436.

Funk, N. E.

Discussion, 175.

G**Gibboney, J. H.**

Discussion, 759, 762.

Gillett, H. W.

Notes on Some Endurance Tests of Metals, 476.
Discussion, 609, 760.

Gillette, C. S.

Discussion, 435.

Gonnerman, H. F.

Effect of End Condition of Cylinder in Compression Tests of Concrete, 1036.

Discussion, 1065.

Graham, W. F.

Discussion, 426.

Greenman, R. S.

Discussion, 838.

H

Hall, J. H.

Composition and Physical Properties of Cast 12-per-cent Manganese Steel, 626.

Hall, R. E.

Discussion, 430.

Hanks, G. R.

Composition and Physical Properties of Cast 12-per-cent Manganese Steel, 626.

Herschel, W. H.

Discussion, 973.

Hollister, S. C.

Discussion, 839.

Holz, H. A.

Discussion, 155.

Howe, H. L., Jr.

Discussion, 1082.

Hoyt, S. L.

Discussion, 177.

Hubbard, Prévost.

Discussion, 949.

Hultgren, Axel.

The Carrying Capacity of Ball Bearings Made of Stainless Steel, 304.

Humphrey, Richard L.

Discussion, 837.

Hunter, M. A.

Some Electrical Properties of High-Resistance Alloys, 401.

I

Ingberg, S. H.

Factors Affecting Brick Masonry Strength, 909.

J

Jackson, F. H.

Accelerated Wear Tests of Concrete Pavements, 864.

Discussion, 900.

Jasper, T. McL.

Determination of Poisson's Ratio and a Suggestion for Its Use in Stress Analysis, 1012.

Discussion, 611, 1021.

Jeffries, Zay.

Discussion, 179.

Johnson, A. N.

Direct Measurement of Poisson's Ratio for Concrete, 1024.

Johnson, C. M.

Discussion, 423.

Johnson, J. B.

Characteristics of Material for Valves Operating at High Temperatures, 383.

Johnson, R. P. A.

Structural Timbers: Defects and Their Effect on Strength, 975.

Jones, A.

Some Electrical Properties of High-Resistance Alloys, 401.

Jones, J. L.

Discussion, 427.

Judson, L. V.

A Study of Sieve Specifications, 1084.

K

Knerr, H. C.

Discussion, 436, 611.

Kouwenhoven, W. B.

Magnetic Tests of A.S.T.M. Drills, 635.

Krefeld, W. J.

Discussion, 1110.

Krynitsky, A. I.

Types of Apparatus Used in Testing the Corrodibility of Metals, 717.

L

Lagaard, M. B.

Discussion, 835.

Lessells, J. M.

Discussion, 442, 602.

Lester, H. H.

Discussion, 153.

Libberton, J. H.

Discussion, 837, 840.

Lincoln, J. C.

Discussion, 172.

Lutts, C. G.

Chain: Effect on Proofing and Annealing on Brittleness in Large Chain Links, 651.

Discussion, 660, 661.

Lynch, T. D.

Discussion, 762, 1106.

M

Mack, E. L.

Notes on Some Endurance Tests of Metals, 476.

Gillette, C. S.

Discussion, 435.

Gonnerman, H. F.

Effect of End Condition of Cylinder in Compression Tests of Concrete, 1036.

Discussion, 1065.

Graham, W. F.

Discussion, 426.

Greenman, R. S.

Discussion, 838.

H

Hall, J. H.

Composition and Physical Properties of Cast 12-per-cent Manganese Steel, 626.

Hall, R. E.

Discussion, 430.

Hanks, G. R.

Composition and Physical Properties of Cast 12-per-cent Manganese Steel, 626.

Herschel, W. H.

Discussion, 973.

Hollister, S. C.

Discussion, 839.

Holz, H. A.

Discussion, 155.

Howe, H. L., Jr.

Discussion, 1082.

Hoyt, S. L.

Discussion, 177.

Hubbard, Prévost.

Discussion, 949.

Hultgren, Axel.

The Carrying Capacity of Ball Bearings Made of Stainless Steel, 304.

Humphrey, Richard L.

Discussion, 837.

Hunter, M. A.

Some Electrical Properties of High-Resistance Alloys, 401.

I

Ingberg, S. H.

Factors Affecting Brick Masonry Strength, 909.

J

Jackson, F. H.

Accelerated Wear Tests of Concrete Pavements, 864.

Discussion, 900.

Jasper, T. McL.

Determination of Poisson's Ratio and a Suggestion for Its Use in Stress Analysis, 1012.

Discussion, 611, 1021.

Jeffries, Zay.

Discussion, 179.

Johnson, A. N.

Direct Measurement of Poisson's Ratio for Concrete, 1024.

Johnson, C. M.

Discussion, 423.

Johnson, J. B.

Characteristics of Material for Valves Operating at High Temperatures, 383.

Johnson, R. P. A.

Structural Timbers: Defects and Their Effect on Strength, 975.

Jones, A.

Some Electrical Properties of High-Resistance Alloys, 401.

Jones, J. L.

Discussion, 427.

Judson, L. V.

A Study of Sieve Specifications, 1084.

K

Knerr, H. C.

Discussion, 436, 611.

Kouwenhoven, W. B.

Magnetic Tests of A.S.T.M. Drills, 635.

Krefeld, W. J.

Discussion, 1110.

Krynitsky, A. I.

Types of Apparatus Used in Testing the Corrodibility of Metals, 717.

L

Lagaard, M. B.

Discussion, 835.

Lessells, J. M.

Discussion, 442, 602.

Lester, H. H.

Discussion, 153.

Libberton, J. H.

Discussion, 837, 840.

Lincoln, J. C.

Discussion, 172.

Lutts, C. G.

Chain: Effect on Proofing and Annealing on Brittleness in Large Chain Links, 651.

Discussion, 660, 661.

Lynch, T. D.

Discussion, 762, 1106.

M

Mack, E. L.

Notes on Some Endurance Tests of Metals, 476.

- MacKenzie, J. T.**
The Standard Test Bar for Cast-Iron Pipe with Special Reference to Its Progressive Deflection, 664.
Discussion, 716.
- MacPherran, R. S.**
Discussion, 171, 974.
- MacQuigg, C. E.**
Some Engineering Applications of High-Chromium-Iron Alloys, 373.
- Malcolm, V. T.**
Methods of Testing at Various Temperatures and Their Limitations, 15.
Discussion, 183, 440.
- Marsh, Kirtland.**
Discussion, 158.
- Marshall, C. H.**
Discussion, 1004.
- Mathews, J. A.**
Discussion, 180, 432.
- Mattimore, H. S.**
Discussion, 779, 839, 897.
- McAdam, D. J., Jr.**
Accelerated Fatigue Tests and Some Endurance Properties of Metals, 454.
Endurance Properties of Corrosion-Resistant Steels, 273.
The Endurance Range of Steel, 574.
Discussion, 452, 610, 611, 616.
- McMillan, F. R.**
Discussion, 778, 838, 899.
- Merriman, Thaddeus.**
Discussion, 779.
- Miller, D. G.**
Laboratory Investigations of the Influence of Curing Conditions and Various Admixtures on the Life of Concrete Stored in Sulfate Solutions as Indicated by Physical Changes, 847.
Discussion, 862, 863.
- Mochel, N. L.**
Discussion, 168, 661.
- Moldenke, Richard.**
Recent Investigations on Cast Iron for Pipe, 682.
Discussion, 712.
- Moore, H. F.**
Discussion, 161, 601, 610.
- Moore, R. R.**
Resistance of Metals to Repeated Static and Impact Stresses, 547.
- Morrison, I. F.**
Effect of Finely Divided Lignite Coal on the Strength of Concrete, 841
Discussion, 846.
- Moss, S. A.**
Discussion, 174.

N

Nelson, H. A.

Further Study of Accelerated Weathering: Effect of Variations in Exposure Cycle Combinations on Common Types of Varnishes, 920.

Newlin, J. A.

Structural Timbers: Defects and Their Influence on Strength, 975.

Discussion, 988, 989.

Nolan, Thomas.

Discussion, 988, 989.

O

Orrok, G. A.

Discussion, 176.

Outerbridge, A. E., Jr.

Discussion, 763.

P

Palmer, F. R.

Discussion, 436.

Pauls, J. T.

Accelerated Wear Tests of Concrete Pavements, 864.

Pearson, J. C.

Discussion, 863.

Petrenko, S. N.

Discussion, 1010.

Porter, J. M.

Properties of Gypsum Tile, 901.

Price, W. B.

Discussion, 422.

Puffer, S. R.

Discussion, 164.

Pullar, H. B.

Blown Oils, 943.

Discussion, 949.

Q

Quick, G. W.

Discussion, 1004.

R

Rawdon, H. S.

Types of Apparatus Used in Testing the Corrodibility of Metals, 717.

Discussion, 756.

Rea, A. S.

Discussion, 899.

Robinson, E. L.

Discussion, 176.

Rys, C. F. W.

Discussion, 1109.

S

Saklatwalla, B. D.

Discussion, 428.

Schmutz, F. C.

Further Study of Accelerated Weathering: Effect of Variations in Exposure Cycle Combinations on Common Types of Varnishes, 920.

Schwartz, H. A.

Discussion, 164, 711.

Shuman, J. J.

Discussion, 1105.

Skidmore, H. W.

Discussion, 950.

Sligh, T. S., Jr.

An Oxidation Method for Measuring the Stability of Mineral Oils, 964.

Discussion, 974.

Smith, R. H.

High Tensile Strengths with Low-Carbon Steels, 618.

Snyder, E. A.

Sludging Tests for Transformer Oils: A Criticism of Various Test Methods and a Proposed New Method of Test, 954.

Discussion, 973, 974.

Spackman, H. S.

Discussion, 837, 862.

Speller, F. N.

Discussion, 162, 753, 763, 1101.

Spring, L. W.

Industrial Applications of Metals at Various Temperatures, 11.

Discussion, 181.

Strauss, Benno.

Non-Rusting Chromium-Nickel Steels, 208.

Discussion, 443.

Strauss, Jerome.

Introduction to Symposium on Corrosion-Resistant, Heat-Resistant and Electrical Resistance Alloys, with Tabulation of Manufacturers' Data on Composition and Properties of the Alloys, 189.

Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion, 217.

Discussion, 165, 434.

T

Talley, J. W.

Stainless Steels: Their Heat Treatment and Resistance to Sea-Water Corrosion, 217.

Templin, R. L.

Discussion, 178, 610.

Trump, C. C.

Discussion, 177.

Tucker, W. A.

Available Data on the Properties of Irons and Steels at Various Temperatures, 56.

Tuckerman, L. B.

Discussion, 606, 1021.

U

Ulman, M. H.

Discussion, 949.

Upthegrove, Clair.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures, 88.

V

Vanick, J. S.

Deterioration of Some Metals in Hot, Reducing Ammonia Gases, 348.

W

Waddington, W. H.

Discussion, 434.

Walker, P. H.

Discussion, 1102.

Walker, Stanton.

Discussion, 1034.

Warwick, C. L.

Discussion, 1105.

Webb, H. R.

Effect of Finely Divided Lignite Coal on the Strength of Concrete, 841.

White, A. E.

Available Data on the Properties of Non-Ferrous Metals and Alloys at Various Temperatures, 88.

Discussion, 187.

Whitman, W. G.

Discussion, 755.

Whittemore, H. L.

Discussion, 1006.

Wig, R. J.

Discussion, 862.

Wiggin, T. H.

How Shall the Benefits of A.S.T.M. Standardization be Secured to the Small User?, 1097.

Discussion, 660, 708, 1111.

Wilhelm, R. B.

Discussion, 142.

Y

Young, C. D.

Discussion, 660.